Docket 5n956808

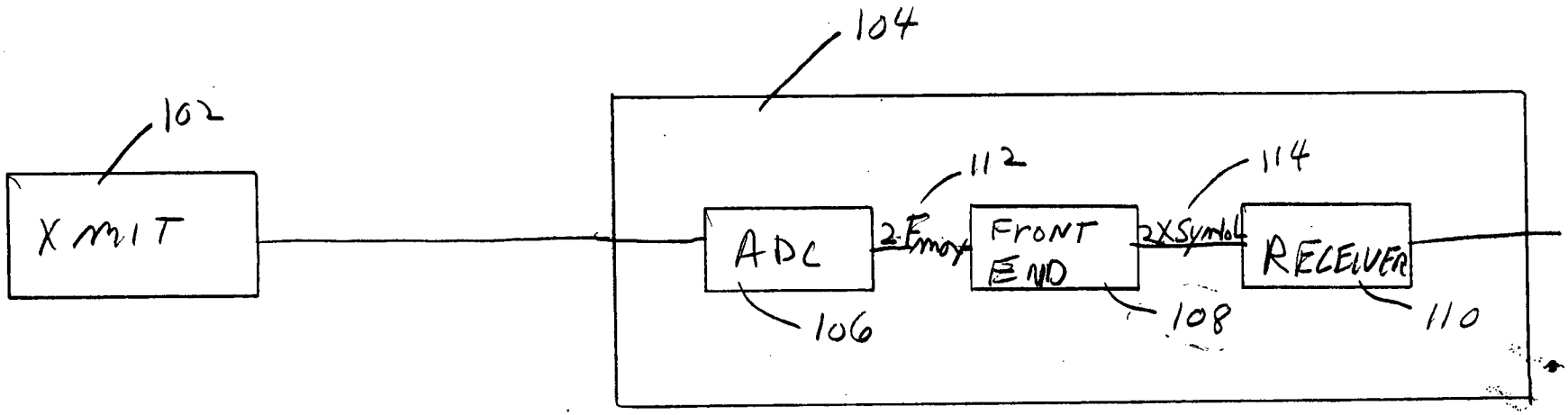


FIGURE 1

Docket 5455960

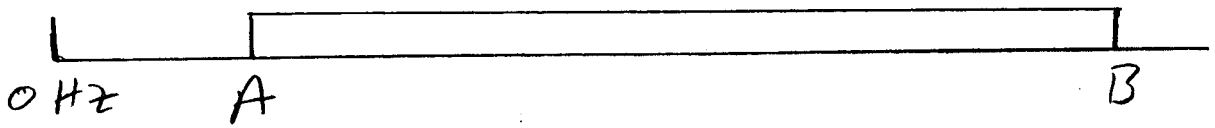


FIGURE 2A

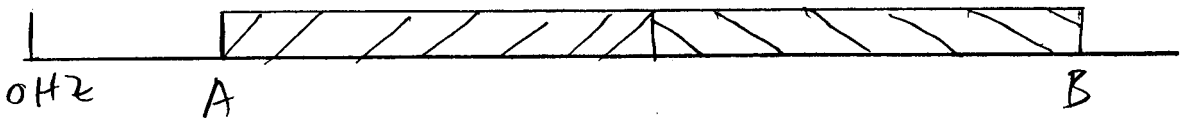


FIGURE 2B

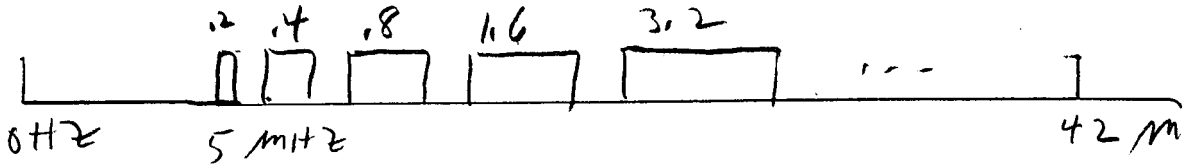


FIGURE 2C

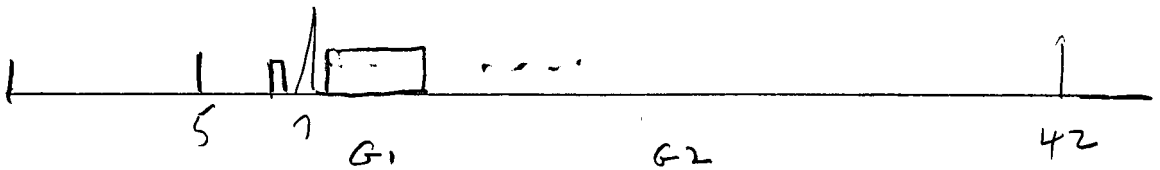


FIGURE 2D

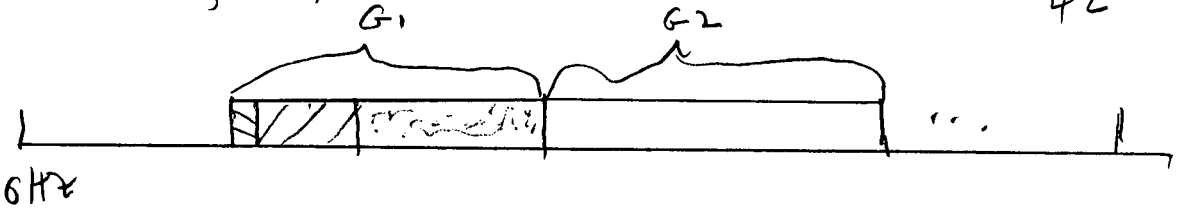


FIGURE 2E

100

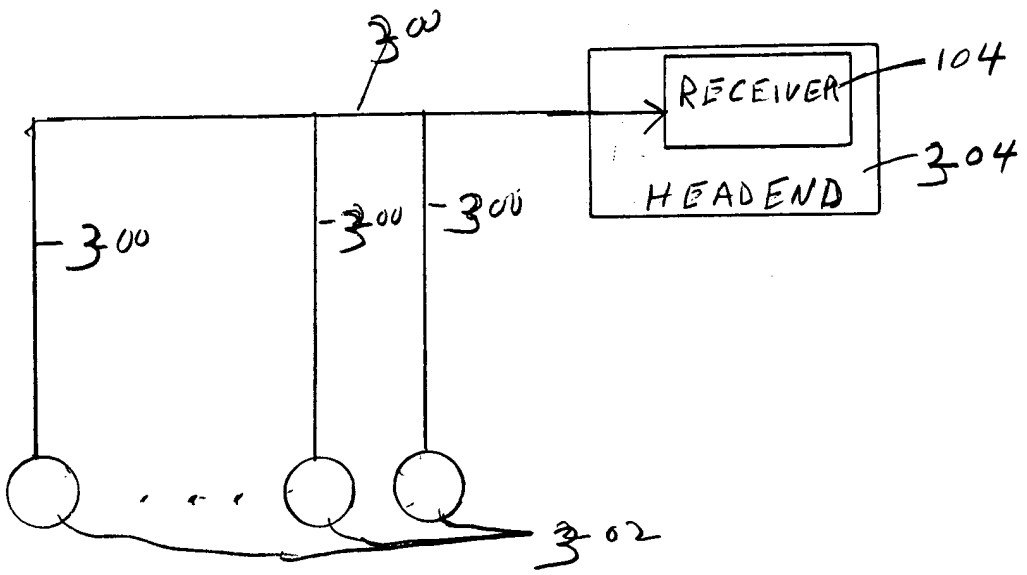
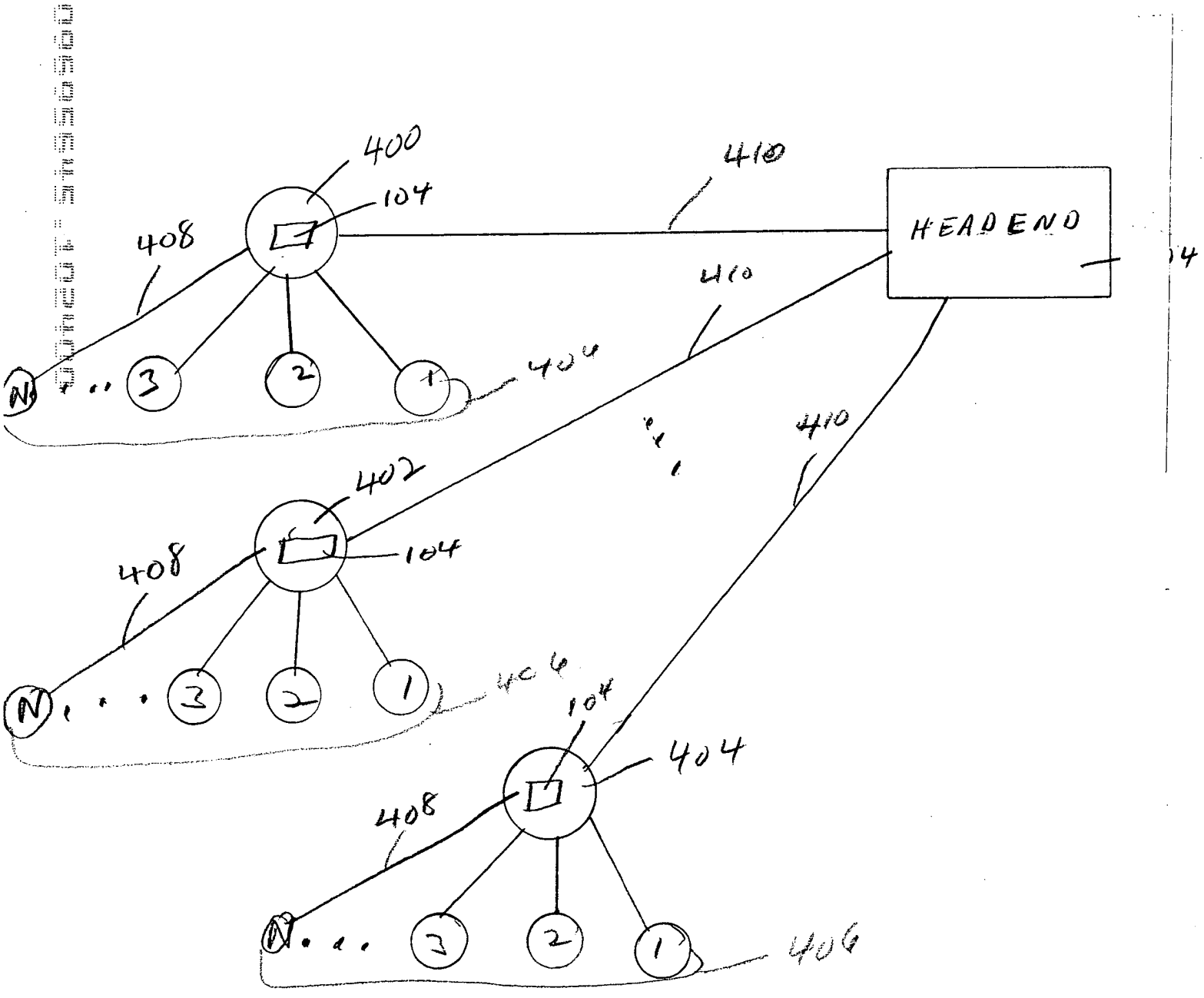


FIGURE 3

FIGURE 4


400
104
410
HEADEND
408
410
N
3
2
1
406
402
104
408
410
N
3
2
1
406
104
404
408
N
2
2
1
406

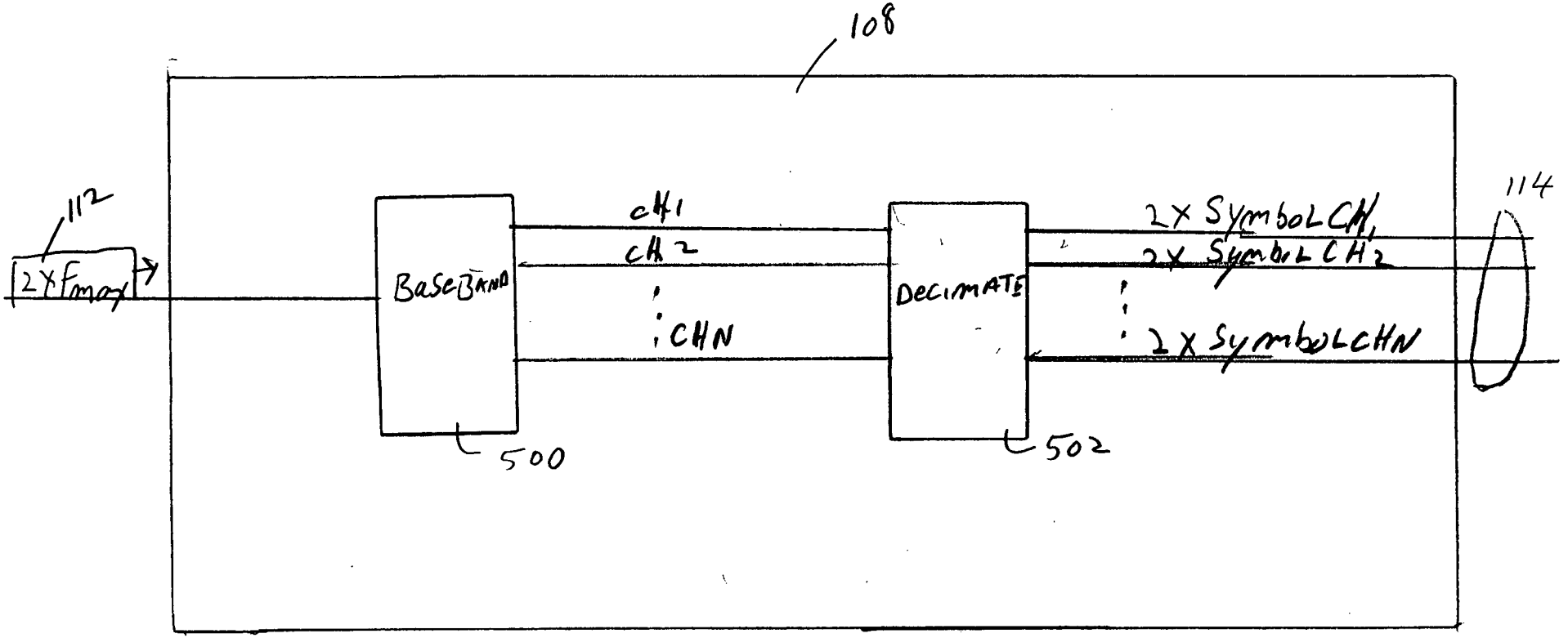

108
112
2XFmax
BASEBAND
CH1
CH2
CHN
DECIMATE
2X SymbolCH1
2X SymbolCH2
2X SymbolCHN
114
500
502

FIGURE 5

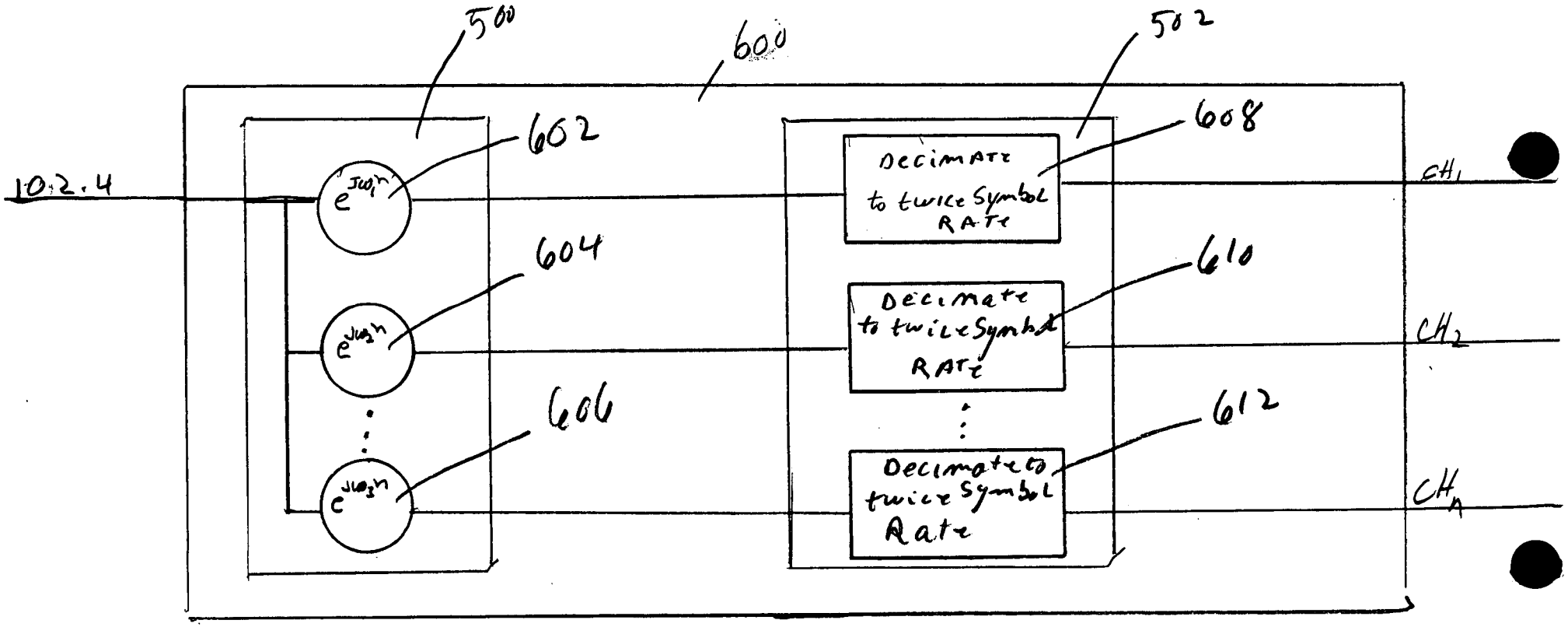

500
600
502
602
604
606
608
610
612
102.4
$e^{j\omega_1 n}$
$e^{j\omega_2 n}$
$e^{j\omega_I n}$
Decimate to twice Symbol RATE
Decimate to twice Symbol RATE
Decimate to twice Symbol Rate
CH_1
CH_2
CH_A

FIGURE 6

700

FIGURE 7

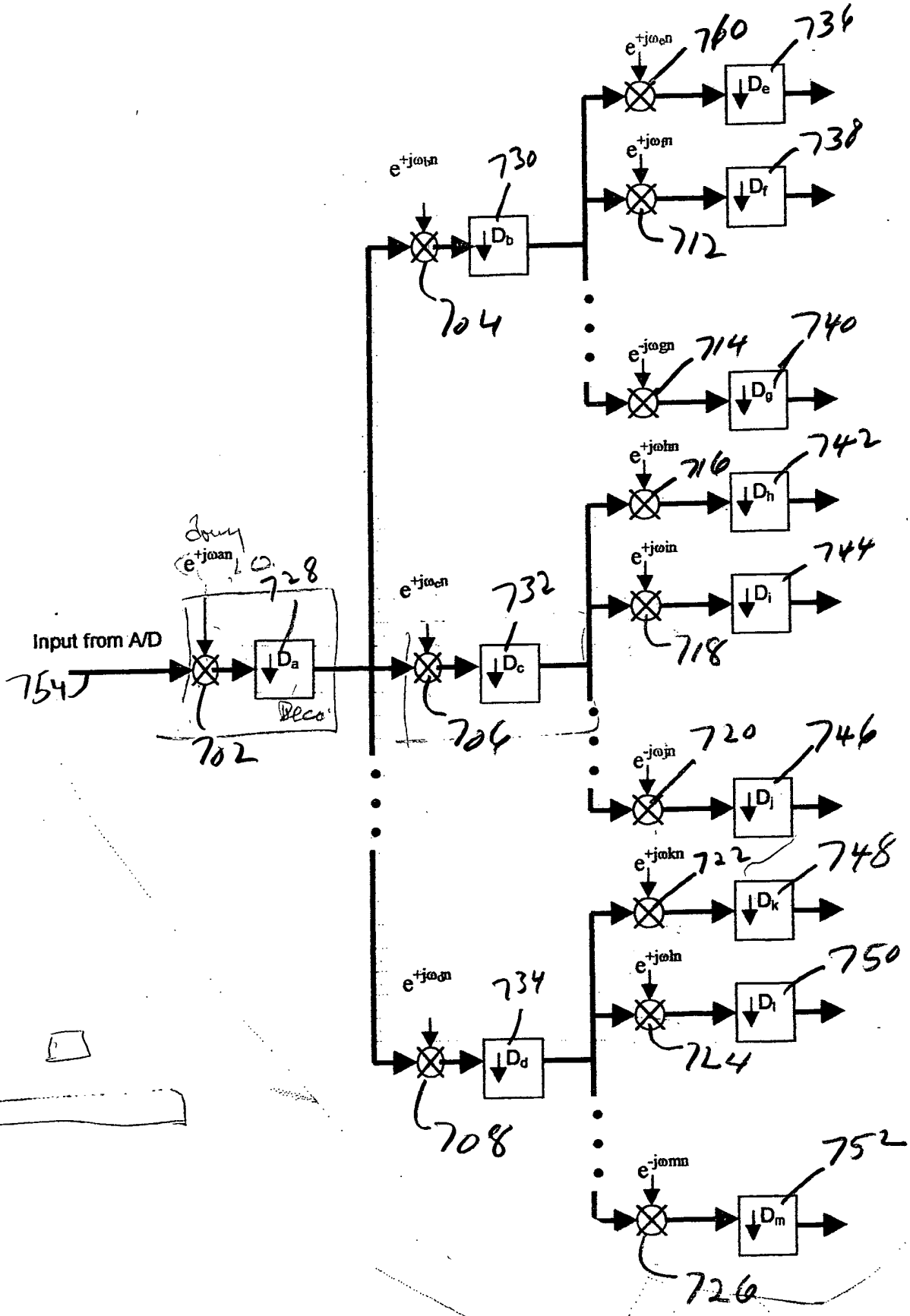
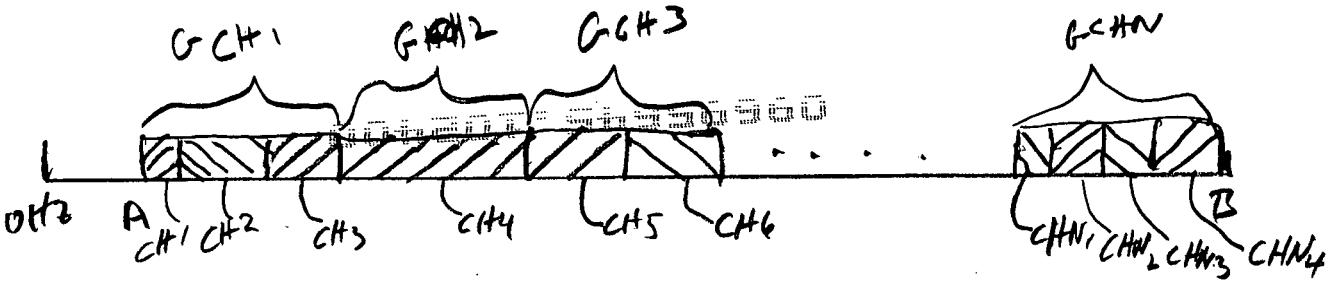
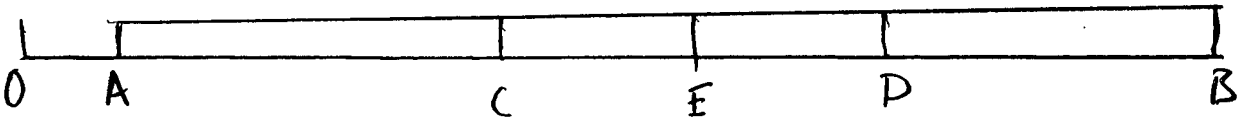

Input from A/D
754
$e^{+j\omega an}$
728
$\downarrow D_a$
Deco
702
$e^{+j\omega bn}$
730
$\downarrow D_b$
704
$e^{+j\omega cn}$
732
$\downarrow D_c$
706
$e^{+j\omega dn}$
734
$\downarrow D_d$
708
$e^{+j\omega en}$
760
736
$\downarrow D_e$
$e^{+j\omega fn}$
738
$\downarrow D_f$
712
$e^{-j\omega gn}$
714
740
$\downarrow D_g$
$e^{+j\omega hn}$
716
742
$\downarrow D_h$
$e^{+j\omega in}$
744
$\downarrow D_i$
718
$e^{-j\omega jn}$
720
746
$\downarrow D_j$
$e^{+j\omega kn}$
722
748
$\downarrow D_k$
$e^{+j\omega ln}$
750
$\downarrow D_l$
724
$e^{-j\omega mn}$
752
$\downarrow D_m$
726

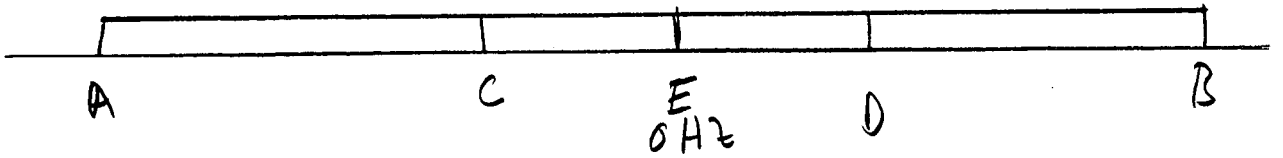
FIGURE 8



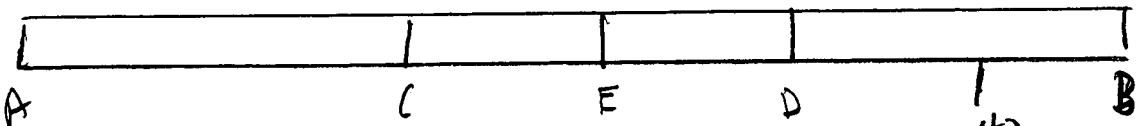
9A



9B



9C



9D

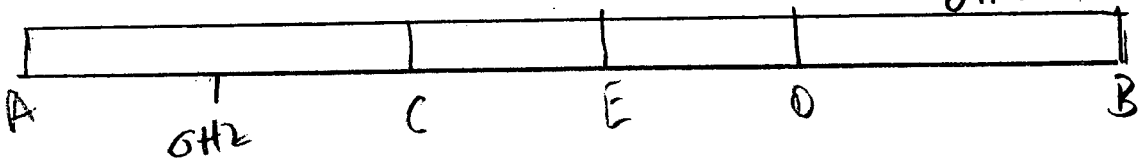


FIGURE 10

1000

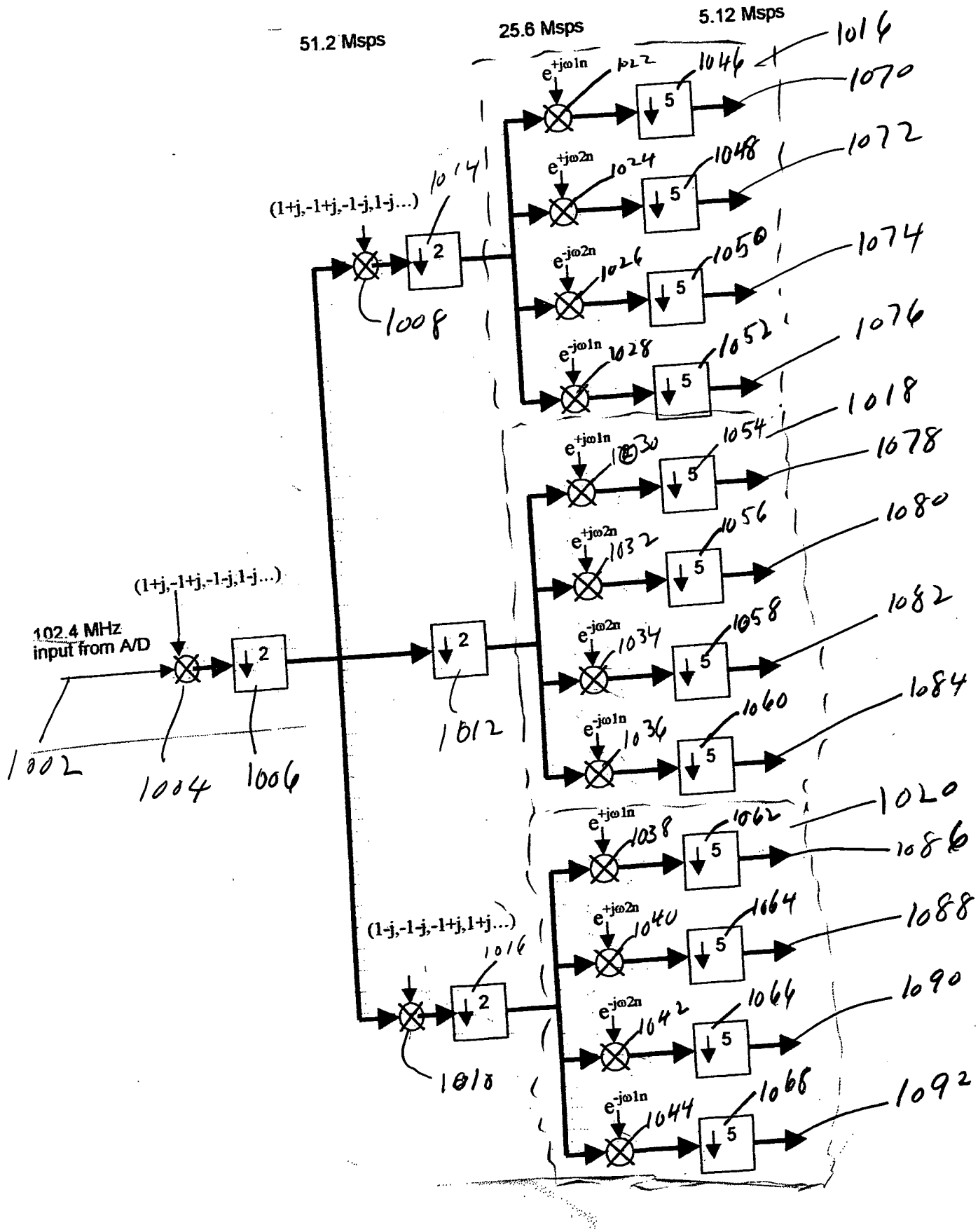


FIGURE 11

1100

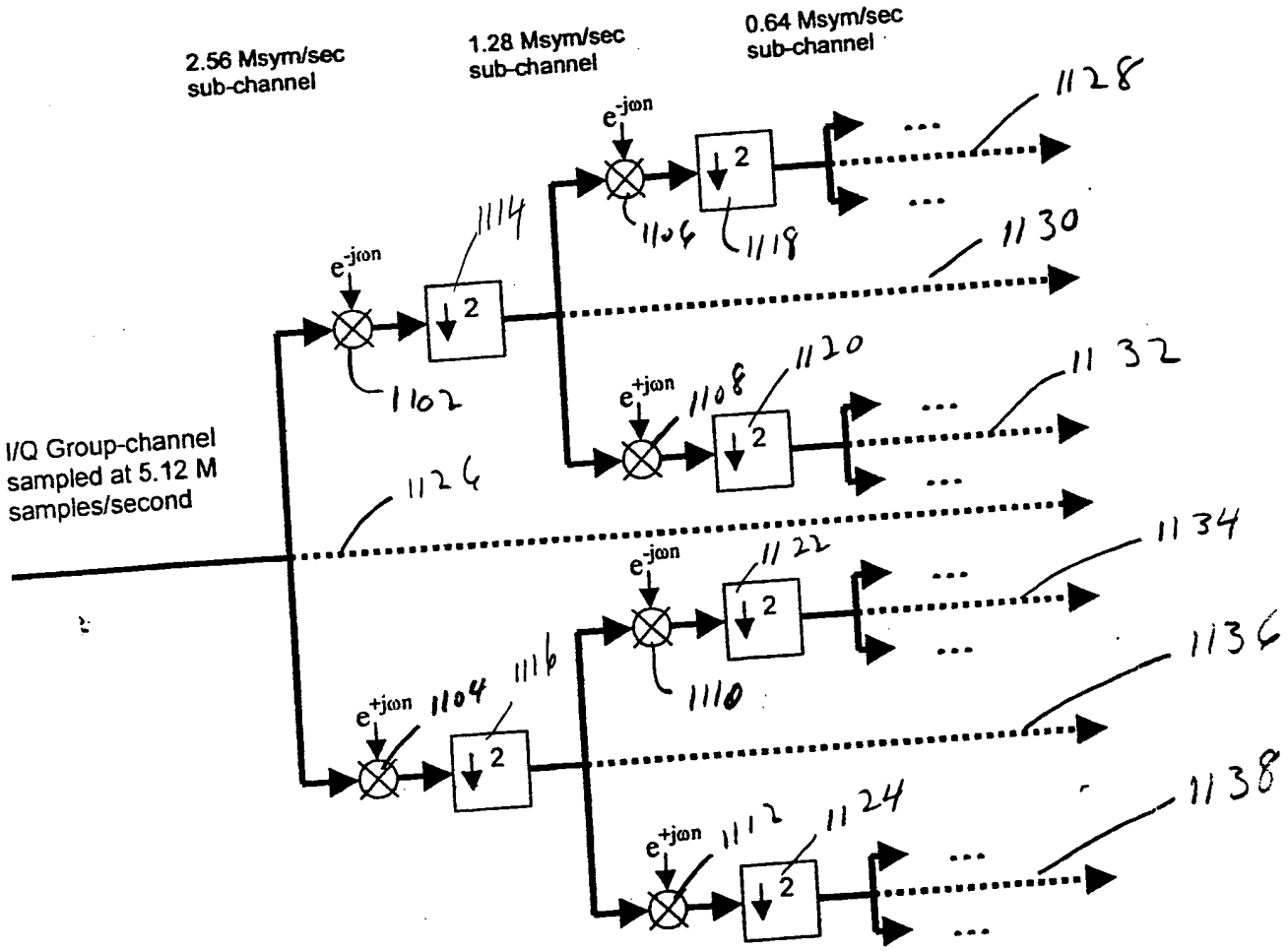
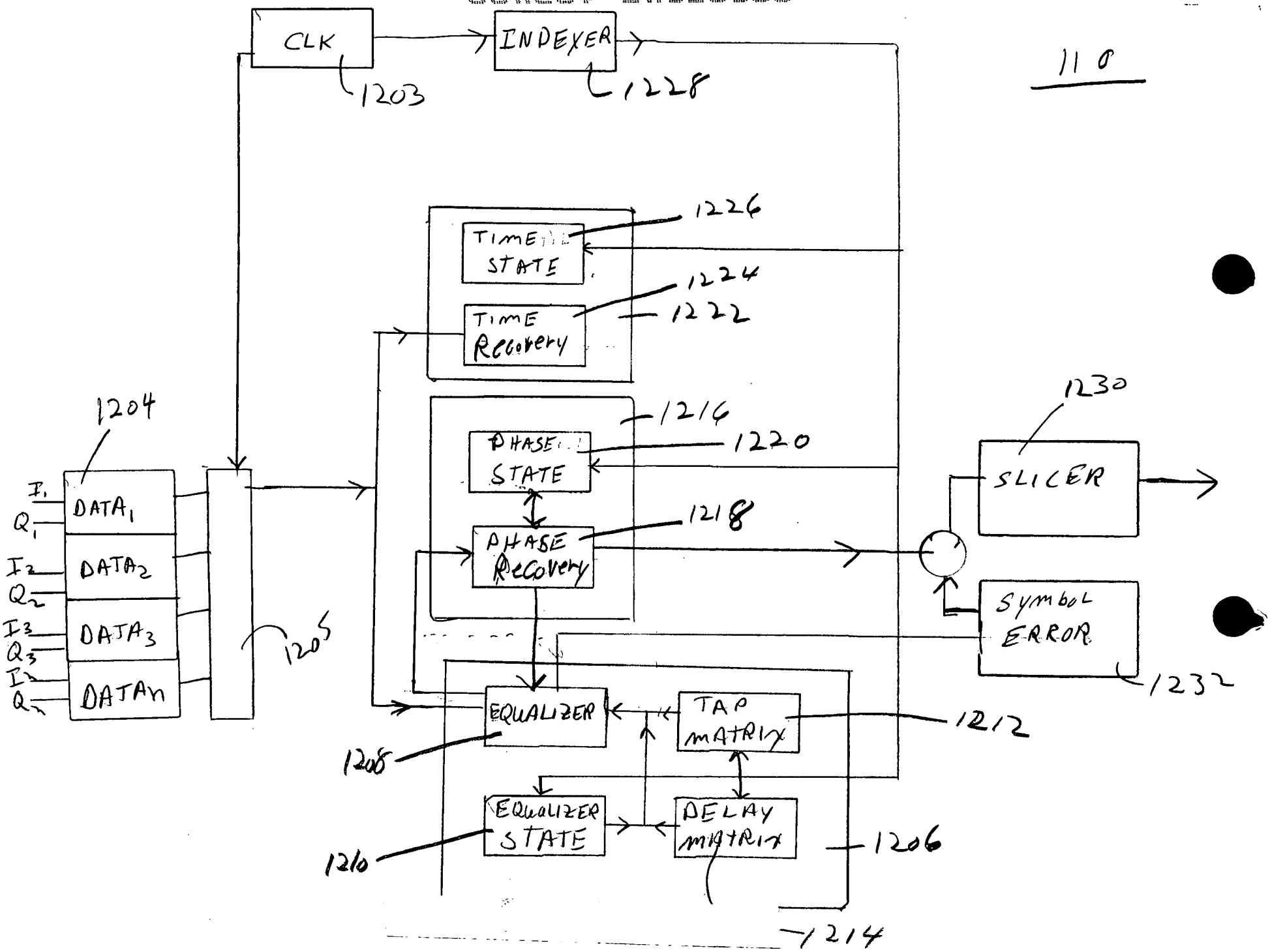


FIGURE 12


110
CLK
1203
INDEXER
1228
1226
TIMING STATE
1224
TIME Recovery
1222
1216
PHASE STATE
1220
PHASE Recovery
1218
1204
I1
Q1
I2
Q2
I3
Q3
In
Qn
DATA1
DATA2
DATA3
DATAn
1205
EQUALIZER
1208
TAP MATRIX
1212
EQUALIZER STATE
1210
DELAY MATRIX
1206
1214
1230
SLICER
SYMBOL ERROR
1232

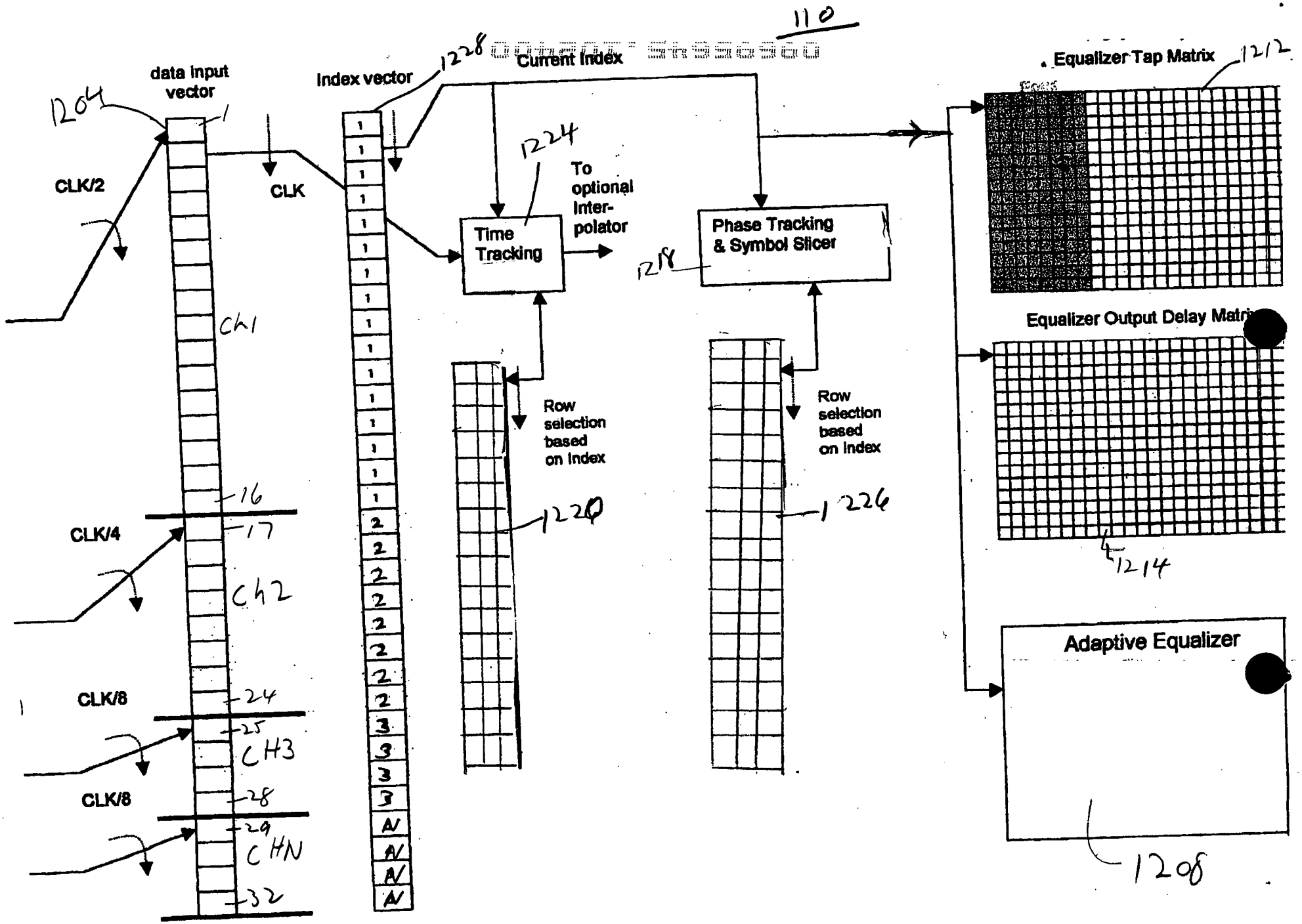

110
data input vector
1204
Index vector
1228
Current Index
Equalizer Tap Matrix
1212
CLK/2
CLK
1224
To optional Inter-polator
Time Tracking
Phase Tracking & Symbol Slicer
1218
Equalizer Output Delay Matrix
Row selection based on Index
Row selection based on Index
1220
1226
1214
CLK/4
CLK/8
CLK/8
Adaptive Equalizer
1208

FIGURE 13